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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TORRES, JOSEPH D

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 07/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/503,140

Applicant(s)

HAYASHI ET AL.

Examiner

Joseph D. Torres

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: '17a' and '19b' in Figure 2, and '17a' in Figure 12. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to because the last number of '172<sub>1</sub>' to '172<sub>6</sub>', 'S172<sub>1</sub>' to 'S172<sub>6</sub>' and '173<sub>1</sub>' to '173<sub>6</sub>' in Figures 3 and 9 and in the specification should all either be subscripted or non-subscripted to maintain consistency between the drawings and the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: '14b' on page 11, line 9; '211' on page 34, lines 7 and 10; '319' on page 41, line 18 and page 42, lines 8 and 9. A proposed drawing correction or corrected

drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. For example: the last number of '172<sub>1</sub>' to '172<sub>6</sub>', 'S172<sub>1</sub>' to 'S172<sub>6</sub>' and '173<sub>1</sub>' to '173<sub>6</sub>' in Figures 3 and 9 and in the specification should all either be subscripted or non-subscripted to maintain consistency between the drawings and the specification.

### ***Claim Objections***

Claims 1- 23 are objected to because of the following informalities:

- in line 5, it appears "errors" was intended in place of "error"
- the language in claim 1 should be rewritten to clarify "said read data" in line 5
- the language in claim 10 should be rewritten to clarify "said reproduced data" in line 5.

Claims 10, 19 and 20 cite similar language.

Claims 2-9, 11-18 and 21-23 depend from claims 1, 10 and 20, hence inherit the flaws of claims 1, 10 and 20.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1- 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said error correction" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claims 10, 19 and 20 cite similar language.

Claims 2-9, 11-18 and 21-23 depend from claims 1, 10 and 20, hence inherit the flaws of claims 1, 10 and 20.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-5, 10-14, 19 and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee, Woo-Nyun et al. (US 5930448 A, hereafter referred to as Lee).

Lee anticipates claims 1, 10, 19 and 20.

Lee teaches a tracking control circuit 20 (i.e., a readout controlling apparatus) and a reproducing device 22 for controlling reading conditions (i.e., tracking control) at the time of reproducing (i.e., reading) data from a recording medium (see Abstract and Figure 2, Lee). ECC Decoder 12 is an error correcting means for correcting errors in reproduced (i.e., read) data (see Abstract and Figure 2, Lee). Bit Error Rate Detector 14 is a calculating means for calculating an error rate from ECC Decoder 12 (see Abstract and Figure 2, Lee). MPU 16 and Memory 18 are a means for controlling the tracking control (i.e., said reading conditions) in order to keep the Bit Error Rate (BER) within a predetermined limit (i.e., in order to make said error rate small). In addition, the reproducing device cited in the Abstract of Lee is a reproducing means and since the device in Lee is a recording and reproducing device (col. 1, lines 10-11, Lee), the device inherently must have a recording and reading means for recording and reading recorded data on the recording medium.

Lee anticipates claims 2, 3, 11, 12, 21 and 22.

Lee teaches that data is coded in units of predetermined code blocks (data-sync blocks in Figure 1 of Lee). The ECC Decoder 12 (i.e., an error correcting means) corrects the data-sync blocks (i.e., code blocks) in units of said code blocks. In Lee the BER is calculated by counting the number of errors (using an error flag) over a data-sync block (i.e., code block) whereby the number of errors counted using an error flag is a number of bytes where said error correction was either correctly carried out or not correctly carried out and averaged over number of blocks where said error correction was either correctly carried out or not correctly carried out.

The Examiner would like to point out that the error flag in Lee is generated for each detected error whether the error is correctable or not (col. 3, lines 31-37, Lee), i.e., whether the error correction is carried out or not.

Lee anticipates claims 4, 13. The ID Area in Figure 1 is a control means for controlling the cumulative number of said data-sync blocks (i.e., code blocks).

Lee anticipates claims 5 and 14. See Figure 1 in Lee.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, Woo-Nyun (US 5930448 A) in view of Inoue, Sadayuki et al. (US 5696774 A, hereafter referred to as Inoue).

Lee substantially teaches the claimed invention described in claims 1-5, 10-14, 19 and 20-22 (as rejected above). The Examiner would like to point out that error detection inherently requires various cumulative additions at the detector in order to detect errors when using parity codes. The Examiner would also like to point out that buffers or memory buffers are generally necessary in product codes since all the required operations for generating parity results for the two parity codes cannot be performed simultaneously, hence buffers are required to hold data until processing can be completed prior to submitting results to be used in calculating the BER.

However Lee does not explicitly teach the specific use of a buffer memory for cumulative addition results.

Inoue, in an analogous art, teaches Sixth and Seventh Memories 73 and 75 in Figure 24 of Inoue for storing results of cumulative additions.



Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lee with the teachings of Inoue by including use of a buffer memory for cumulative addition results. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a buffer memory for cumulative addition results would provide the opportunity store data during intermediary steps inherently required by a decoder for parity data.

Claims 7, 8, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, Woo-Nyun (US 5930448 A) and Inoue, Sadayuki (US 5696774 A).

Lee and Inoue teach the additional limitations of claims 7, 8, 16 and 17. See Figure 24 in Inoue and rejection to claims 6 and 15, above.

Claims 9, 18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, Woo-Nyun (US 5930448 A) and Inoue, Sadayuki (US 5696774 A) in view of Maeda, Yasuaki et al. (US 5325371 A, hereafter referred to as Maeda).

Lee and Inoue, substantially teaches the claimed invention described in claims 1-8, 10-17, 19 and 20-22 (as rejected above).

However Lee and Inoue do not explicitly teach the specific use of a control mechanism for an optical device.

Maeda, in an analogous art, teaches Servo Controller 6 for controlling the Motor 1 and Head 3 in Figure 5 of Maeda.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lee and Inoue with the teachings of Maeda by including use of a control mechanism for an optical device. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a control mechanism for an optical device would provide the opportunity to control the operation of the head during reproduction and recording.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Despain, Alvin M. et al. (US 6397369 B1 and US 6381088 B1) teaches a control device operatively coupled to a detector for receiving and responding to the error signal containing information about the extent of errors for generating a control signal used to reduce the extent of errors in the input signal based on information about the extent of errors contained in the error signal. Katayama, Yukari et al. (US 6400523 B1) teaches a method for recording on or reproducing from a magnetic disk. Tobita, Minoru et al. (US 5721873 A) teaches an error correction circuit for correcting errors in data reproduced by a reproducing circuit and detecting an error rate of the data reproduced by the reproducing circuit. Shikakura, Akihiro (US 5687182 A) teaches that error words are corrected using an error correction code within the word

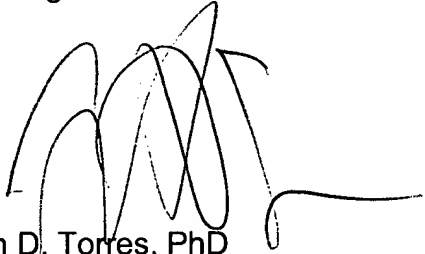
train and an error rate of the word train is generated. Kassab, Roger Jean (US 5687036 A) teaches a method for optimizing write current in a disc drive. Noda, Chosaku (US 6216245 B1) teaches a method of generating and processing data by an interleave method capable of processing with a few memories in a digital recording and reproducing system using an optical disk or the like, a medium recording the data, and a data recording apparatus and a reproducing apparatus. Tsuji, Shiro et al. (US 4375100 A) teaches a method and apparatus for encoding source data into a data block format composed of data words and parity check words derived from selected data words.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

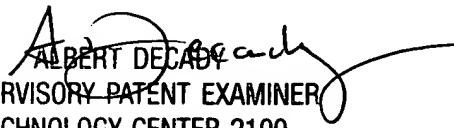
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



Joseph D. Torres, PhD  
Art Unit 2133  
June 18, 2002



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